

## LOWER PROFILE PACKAGE WITH POWER SUPPLY IN PACKAGE

### Abstract of the Disclosure

A package with a Power Supply In Package (PSIP) feature may include a charge pump external to the die in  
5 order to take advantage of a smaller die size. The die may be mounted on a substrate with an array of solder balls of a Ball Grid Array. The package may have substantially the same size as a package without PSIP capability. In one embodiment, the passive components may be mounted on the  
10 die using epoxy. In another embodiment, the reduced-size passive components may be mounted on the substrate of the ball grid array in a region free of solder balls.